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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/309,768	05/11/1999	HIROFUMI SHIMOMURA	134960/98	7947

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EXAMINER

SEDIGHIAN, REZA

ART UNIT PAPER NUMBER

2633

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/309,768

Applicant(s)

SHIMOMURA ET AL.

Examiner

M. R. Sedighian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20,24,27 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20,24,27 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5/2/05 6) ☐ Other:

1. This communication is responsive to RCE filed 5/2/2005 in the application of Shimomura et al. for "Optical Switch and Optical Network" filed 5/11/99. Claims 20, 24, 27, and 33 are now pending.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 20, 24, 27, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US Patent No: 5,710,660) in view of Masatoshi et al. (Japanese Patent Application No: 09-36834).

Regarding claim 20, Yamamoto discloses an optical single wavelength optical switch (col. 6, lines 6-13), comprising of a first optical amplifier (3, fig. 2), a second optical amplifier (4, fig. 2) connected in cascade to the first optical amplifier (col. 4, lines 33-37), a control unit (19, fig. 2) for outputting first and second control signals for switching a gain of the first and second amplifier (col. 6, lines 26-65, col. 7, lines 3-25), a first coupler (2, fig. 2) connected to an input of the first amplifier (3, fig. 2), and a second optical coupler (9, 8, fig. 2) inserted between the first and second optical amplifier, and wherein the first amplifier (3, fig. 2) includes a first erbium-doped fiber (5, fig. 2) and a first optical pumping source (11, fig. 2) connected to the first erbium-doped fiber with a first optical branch (7, fig. 2), and wherein the second optical amplifier (4, fig. 2) includes a second erbium-doped fiber (6, fig. 2) and a second optical pumping source (12, fig. 2) connected to the second erbium-doped fiber with a second optical

branch (8, fig. 2). Yamamoto differs from the claimed invention in that Yamamoto does not disclose the single wavelength optical switch is inserted into a multiplexing system formed of an optical demultiplexer that demultiplexes a WDM light into a plurality of light signals and outputting each of the plurality of light signals to a plurality of branches, and an optical multiplexer for multiplexing the outputted light signals. However, using optical demultiplexer and multiplexer for transmitting a plurality of different light signals is well known in the art. For example, Masatoshi teaches an optical demultiplexer/multiplexer system (fig. 1), wherein optical signals are demultiplexed (210, fig. 1) into a plurality of branches (131, 132, 133, fig. 1) and in each branch optical signals are amplified (441, fig. 1) and multiplexed (310, fig. 1). As it is taught by Masatoshi, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate the optical amplification system of Yamamoto into an optical demultiplex/multiplex transmission system in order to amplify and transmit a plurality of different light signals.

Regarding claim 24, Yamamoto differs from the claimed invention in that Yamamoto does not disclose a plurality of nodes that are connected through optical fiber lines, and wherein each of node comprises of an optical amplifying switch. Masatoshi discloses a plurality of nodes that are connected through an optical fiber line (the nodes that are comprised of optical amplifiers, positioned along each of the respective branch lines 131, 132, 133, and 134 in fig. 1) and having optical line amplifiers (411, fig. 1). Therefore, as it is taught by Masatoshi, it would have been obvious to a person of ordinary skill in the art to incorporate the optical amplification system of Yamamoto in nodes of a network to amplify different optical signals in different nodes.

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Regarding claim 27, Yamamoto differs from the claimed invention in that Yamamoto does not specifically disclose first optical amplifier switches the route of light. Yamamoto discloses a control unit 19 that can control pump sources 11 and 12, and for example pump source 11 can be controlled such that no signal can be outputted, and the transmission of light can be blocked or switched. Therefore, it would have been obvious to an artisan at the time of invention that an optical amplifier and control circuitry such as the one of Yamamoto can switch the route of light signals to provide an amplification system that can respond to changes in input or output conditions, or operating conditions, such as link loss, pump deterioration, and gain requirements.

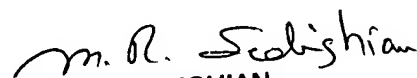
Regarding claim 33, Yamamoto discloses the second coupler (8, fig. 2) is for receiving input light to increase a power of the input signal (the input light is amplified by optical amplifier unit 4 through coupler 8 and amplifier 6).

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


M. R. SEDIGHIAN
PRIMARY EXAMINER